

Applicant: Ebersole et al.

For: Augmented Reality Display Integrated with Self-Contained Breathing Apparatus

- 1. A system for creating an augmented reality display comprising:
 - a self-contained breathing apparatus (SCBA) mask;
 - a head-mounted display (HMD); and
 - a motion tracker.
- 2. The system of claim 1, wherein the HMD is non-see-through, and further comprising a head-mounted camera.
- 3. The system of claim 1 in which the HMD is a see-through display.
- 4. The system of claim 2, further comprising one or two mirrors to set the camera viewpoint to more closely coincide with the wearer's eye position.
- 5. The system of claim 2, further comprising a head-mounted camera for generating a stereoscopic view.
- 6. The system of claim 5, further comprising one or two mirrors to set the camera viewpoints to more closely coincide with the wearer's eye positions.
- 7. The system of claim 1, further comprising headphones.
- 8. The system of claim 7, further comprising shafts to connect the headphones to the SCBA, and wherein the shafts are filled with epoxy or other means to strengthen the shafts.
- 9. The system of claim 4, further comprising a rubber bumper placed around the mirror or mirrors.
- 10. The system of claim 6, further comprising a rubber bumper placed around the mirror or mirrors.
- 11. The system of claim 4 wherein each mirror is placed in a mechanical clamp mount.
- 12. The system of claim 6 wherein each mirror is placed in a mechanical clamp mount.
- 13. The system of claim 4, further comprising a structure for protecting each mirror from being bumped or hooked.
- 14. The system of claim 6, further comprising a structure for protecting each mirror from being bumped or hooked.
- 15. The system of claim 4 wherein each mirror is mounted on a mounting plate.
- 16. The system of claim 6 wherein each mirror is mounted on a mounting plate.

17. The system of claim 1 wherein the non-augmented reality portion of the user's field of view is blocked from view by the user with opaque material such that only augmented reality imagery is visible to the user.

18. The system of claim 17 wherein the said opaque materials are selected from the group of materials consisting of tape, foam, plastic, rubber, silicone, paint, and combinations of these materials.

ADD
B.